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Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

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FEDERAL COMMUNICATIONS COMMISSION
OFFICE OF SECRETARY

In the Matter of)

FCC 94-97

Allocation of Spectrum Below)
5 GHz Transferred from Federal)
Government Use)

ET Docket No. 94-32

To: The Commission

COMMENTS OF LEACO RURAL TELEPHONE COOPERATIVE, INC.

Leaco Rural Telephone Cooperative, Inc. ("Leaco") by its attorneys and pursuant to the Commission's "Notice of Inquiry" in ET Docket 94-32 (released May 4, 1994) ("NOI") hereby submits the following comments in support of allocating the spectrum bands 2390-2400 MHz, 2402-2417 MHz and 4660-4685 MHz for the provision of interactive video, voice and data services in rural areas.

I. BACKGROUND

Leaco is a wireline telephone cooperative wholly-owned by its subscribers. Leaco provides landline telephone service, Basic Exchange Telecommunications Radio Service ("BETRS") and cellular service to rural parts of southeastern New Mexico and a portion of Loving county in west Texas. The area served by Leaco covers approximately 4,500 square miles and is sparsely populated.¹ Neither off-the-air television service nor cable television service

¹ There are only 900 telephone subscribers spread throughout this vast area. Telephone service to 57 of these subscribers could only be provided using fixed cellular service and four of these 57 subscribers must use solar power in order to receive telephone service because there is no commercial power source available.

is available to the majority of this area making it virtually impossible for most residents to receive local information, weather and news.² The area contains five school districts with a total of 33 schools and approximately 733 teachers. The approximately 13,357 students enrolled in these schools do not receive the educational opportunities afforded to students living in urban and suburban areas. It is difficult to attract quality teachers to the area and the student population is not large enough to support an advanced curriculum. Similarly, medical treatment facilities are limited. There are currently two medical treatment facilities in this rural area. Medical emergencies require treatment at hospitals located in Lubbock, Texas -- a distance of 120 miles.

Leaco has previously investigated several methods of providing educational video services to these students and providing entertainment video, voice and data services to its subscribers. Leaco determined that the cost of installing cable or fiber in this area is prohibitively expensive. In 1992, Leaco came to the conclusion that the only way to provide the advanced telecommunications services this area needs is through radio-based communications.

Leaco explored the possibility of providing the students and subscribers with service using channels allocated to the Instructional Television Fixed Service ("ITFS") and Multichannel Multipoint Distribution Service ("MMDS"). However, it discovered

² Two television translators with programming originating out of Albuquerque, New Mexico serve a tiny portion of the southeastern area.

that ITFS and MMDS spectrum was not available in its area because of mutual exclusivity with surrounding systems. Additionally, Leaco explored the possibility of providing interactive video service utilizing frequencies in the 28 GHz band. However, the Commission has delayed licensing of Local Multipoint Distribution Service ("LMDS") by its initiation of a rulemaking proceeding to determine whether sharing of the 28 GHz band between satellite and terrestrial uses is feasible or whether the band should be segmented, allowing exclusive use by either terrestrial or satellite services.³ Also, there has been some indication that these frequencies may be better suited for congested urban areas than for sparsely populated rural areas.

Having exhausted the obvious sources for providing this service, Leaco views this proceeding as an opportunity to obtain spectrum to provide interactive video, voice and data services to rural areas advancing the Clinton Administration's policy goals of providing interactive educational telecommunications services to school children throughout the country.

II. DISCUSSION

A. The Creation Of A National Information Infrastructure That Provides Access To All Requires Additional Spectrum To Be Allocated In Rural Areas For Interactive Educational Purposes.

In the NOI, the Commission states that it "has established the

³ See, Rulemaking to Amend Part 1 and Part 21 of the Commission's Rules to Redesignate the 27.5 - 29.5 GHz Frequency Band and to Establish Rules and Policies for Local Multipoint Distribution Service ("Second NPRM"), 9 FCC Rcd 1394 (1994).

goal of creating a national information infrastructure that will provide access to all as a means of boosting productivity, creating jobs, educating children and improving the provision of health care."⁴ The goal of universal access to all communications services can be more readily met by allocating the subject spectrum for the provision of an interactive video, data and voice service to rural areas.

In the past, the Commission has not given much consideration to rural areas when allocating spectrum for new radio-based communications services. Congress sought to remedy this by establishing its mandate in the Omnibus Budget Act Reconciliation Act of 1993 ("Budget Act") directing the FCC to ensure that licenses for new technologies be awarded in a manner that promotes "the development and rapid deployment of new technologies, products, and services for the benefit of the public, including those residing in rural areas, without administrative or judicial delays." (emphasis added).⁵ Even with this congressional directive in place, the Commission has neglected its duty to rural America. This has become evident most recently by the Commission's adoption of competitive bidding rules that failed to award bidding preferences to rural telephone companies who traditionally have

⁴ NOI at para. 9 (emphasis added).

⁵ See Budget Act, Section 309(j)(3).

been the only provider of communications services to rural areas.⁶ In order to carry out the Congressional mandate and ensure the provision of new radio-based communications to rural America, the Commission must make a more concerted effort to allocate spectrum for purposes that benefit those living in rural areas.

Moreover, in view of the likely adoption of federal legislation that would impose a universal service requirement on all telecommunications services⁷, the ability of rural telecommunications service providers to provide all forms of communications services using radio-based technology becomes critical. Radio-based technology is the only economically feasible technology available to serve sparsely populated rural areas. Coaxial cable and fiber are prohibitively expensive to install in rural areas and existing coaxial cable is difficult from a technical perspective to upgrade to accommodate new services.⁸ Also, by using the same radio spectrum for the provision of interactive video, data and voice services, licensees can take advantage of economies of scale by not replicating equipment and

⁶ See e.g., In the Matter of Implementation of Section 309(j) of the Communications Act - Competitive Bidding, (Narrowband Personal Communications Services) PP Docket No. 93-253, "Third Report and Order," released May 10, 1994; In the Matter of Implementation of 309(j) of the Communications Act - Competitive Bidding (Interactive Video and Data Services), PP Docket No. 93-253, "Fourth Report and Order," released May 10, 1994.

⁷ See "Communications Act of 1994," S. 1822, 103d Cong., 2d Sess. § 102 (1993), "National Communications Competition and Information Infrastructure Act of 1993," H.R. 3636, 103d Cong., 1st Sess. § 102 (1993).

⁸ See, "Infohighway Narrows in Remote Areas," Broadcasting & Cable, p. 83 (May 23, 1994).

buildout costs associated with providing these services over different spectrum using different forms of technology.

In many rural areas, the rural telephone company is one of the largest employers. Implementing and maintaining new interactive video, data and voice services as proposed by Leaco will require the hiring of additional employees thereby promoting economic growth in rural areas. Given the potential for this service, Leaco estimates that within its service area alone, it would need to hire at least fifteen new employees, a significant number given that Leaco currently employs 21 people.

The Commission also states in the NOI that parties proposing a new service should demonstrate how they will "[extend] service to unserved or underserved communities or [extend] educational opportunities and medical services."⁹ As discussed above, sparsely populated rural areas generally lack video, data and voice services. As Leaco specifically demonstrated, its subscribers lack access to video services, including news and information sources. The services proposed by Leaco will not only provide these services and more; they will provide them on an interactive basis.

The proposed interactive service will also extend educational opportunities by allowing teachers in larger communities and urban areas to instruct and interact with students in rural areas in real time. Similarly, the provision of medical services will be enhanced by allowing medical personnel in rural areas to receive real time instruction on both emergency and non-emergency medical

⁹ NOI at para. 9.

procedures via video and voice communications. Likewise, data can be transmitted from the rural medical staff to medical personnel based in larger urban hospitals for evaluation and response. This interactive medical telecommunications technology will allow sick and injured patients to be treated closer to home without the need to travel long distances in order to receive proper medical attention. Leaco's proposed service meets each of the policy goals established by the Commission. Accordingly, the Commission should reallocate the spectrum for interactive video, data and voice use as proposed herein.

B. The Spectrum Bands 2390-2400 MHz, 2402-2417 MHz and 4660-4685 MHz Are Technically Suited For The Provision Of Interactive Video, Voice And Data Services In Rural Areas.

Leaco notes that the 2390-2400 MHz and 2402-2417 MHz spectrum being reallocated is in close proximity to existing wireless cable frequencies. The Multipoint Distribution Service ("MDS") spectrum is located at 2150-2162 MHz, 2650-2656 MHz, 2662-2668 MHz, and 2674-2680 MHz; the MMDS spectrum is located at 2596-2644 MHz and the ITFS spectrum is located at 2500-2644 MHz. The reallocated spectrum will not only be able to utilize existing wireless cable equipment, but it will also be possible to use digital modulation and emerging compression technology to expand the number of channels offered.¹⁰ These interactive video, data and voice

¹⁰ The wireless cable industry has reported that digital compression technology will allow 15 separate channels for each 6 MHz of spectrum. See Second NPRM, 9 FCC Rcd 1394, para. 39 (1994). Accordingly, the spectrum being reallocated could yield approximately 105 channels from all three bands.

services are particularly well-suited for educational and medical purposes. Likewise, the frequencies in the 4660-4685 MHz band being reallocated, while not in close proximity to existing wireless cable facilities, could be used to provide this service. The advantage of specifically allocating the 2390-2400 MHz, 2402-2417 MHz and 4660-4685 MHz spectrum for interactive video, data and voice use is that it is in close proximity to other compatible spectrum and could be used in conjunction with this existing spectrum to build a larger interactive network.

When considering spectrum suitable for rural areas, the distance a transmitter is capable of covering is critical since it is uneconomical to install large numbers of transmitters with small service areas in sparsely populated areas. The reallocated spectrum is both economically and technically suited for rural areas because the range of a single transmitter is far greater than the range of a transmitter operating in the 28 GHz or greater spectrum bands. The typical range for the 28 GHz band is six miles while the typical range of the 2.4 GHz is thirty miles. Thus, the reallocated spectrum is best suited for rural areas.

Leaco anticipates that the interference between adjacent systems would be controlled in much the same manner that MMDS and ITFS systems are controlled by maintaining distance between transmitters, using cross-polarization, directional antennas and terrain blockage. Additionally, allocation of this spectrum for rural use will avoid excessive disruption of any existing use of these frequencies by amateur service licensees because there tends

to be less usage by amateur radio operators in rural areas. Accordingly reallocation of this spectrum is well-suited for interactive video, data and voice use in rural areas.

III. CONCLUSION

The reallocation of spectrum, a limited, highly-valued resource, is an important responsibility requiring the Commission to closely examine the probable impact on the public interest, convenience and necessity. Consequently, the Commission must carefully examine each proposal for new service to determine whether it will ensure that the Commission's overall policy goals will be met. As set forth above, Leaco's proposal for this spectrum meets these policy goals. Accordingly, Leaco respectfully requests that the Commission adopt Leaco's proposed recommendations for establishing an interactive video, voice and data service in this band that will provide educational services to rural areas.

Respectfully submitted,

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